442052

DASH 8 Recorder

Temporary Documentation

Quick-rental® instruments
THANK YOU FOR ORDERING FROM
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FAILURE TO RETURN
THIS ITEM WILL
RESULT IN A
$50 SERVICE
CHARGE

Astro-Med, Inc.
Astro-Med Industrial Park, 600 East Greenwich Avenue
West Warwick, RI • 401-828-4000 • Telex 710-382-6409 • FAX 401-822-2430

Dear Customer:

The final *DASH 8 Operations Manual* will not be available for several weeks, but one will be sent to you as soon as possible.

Several pages are included with this letter to cover basic safety, power, and set-up information. The built-in HELP function within the DASH 8 provides additional operational information.

To use the HELP feature:

1) Load paper into the DASH 8.

2) Turn on the power.

3) Press the HELP Key on the right side of the DASH 8 keyboard. A Help Menu will appear on the DASH 8's LCD display.

4) Press the soft key under "HELP" on the display. The "Quick-Start Guide to Operation" will be printed. This document provides the information you need to get started using the DASH 8 Recorder.

5) Press the soft key under "KEYS" to print an information sheet about the keypad.

If you need further assistance, please call an Astro-Med Customer Service Representative toll free at (800) 343-4039.

POWER REQUIREMENTS:

120/240 VAC
50/60 Hz
3.15/1.6 A

Auxiliary DC Power: 11-17 VDC, 180 VA MAX

SIGNAL MEASUREMENT:

Maximum Input Voltage: 500 VDC or Peak AC
in peak-to-peak mode

250 V RMS
in RMS mode

FRONT-END CONFIGURATION

- Differential, balanced to common, 2 MΩ impedance
- Red jack signal = +
  Black jack signal = -
- If required, common is available on pin 2 of the auxiliary power plug; chassis ground is available on pin 3 of the same connector.
- Signal jacks are designed to accept standard or guarded banana plugs. We recommend the use of guarded plugs when measuring voltages over 30 V RMS (42 VDC).

ADJUSTING ZERO POSITION AND GAIN

Zero and gain are adjusted with the encoder wheel to the left of the input connectors. This encoder is used only for real-time analog functions; menu selections are made entirely by soft key. A yellow LED above the encoder illuminates when it is active.

To adjust, press the "ZERO AND GAIN SETUP" Key on the upper right of the keypad. The Zero Adjust Menu will appear and the encoder wheel will be active for channel one. To select another channel, use the "INC" and "DEC" Keys or, to adjust gain, press the soft key under "RANGE" and the Gain Menu will appear.

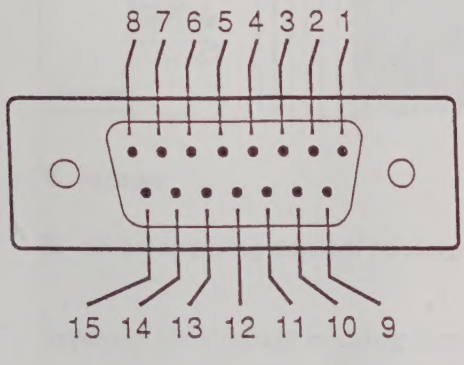
UTILITY PORT FUNCTIONS

(Refer to wiring diagram.)

All the utility port functions are "active low" and are meant to be used with either a switch closure to pin 12 or TTL "low." Do not input more than 5.3 VDC.

Wiring the 15-Pin D-Shell Connector

A 15-pin D-shell connector is provided for use with the DASH 8 UTILITY D-shell receptacle. The table below identifies each pin and its related function.



Description	Pin #
Event 1	1
Event 2	2
Event 3	3
Event 4	4
Event 5	5
Event 6	6
Event 7	7
Event 8	8
External Trigger	9
External Speed	10
Remote Start/Stop	11
Ground	12
no connection	13
no connection	14
System Event	15

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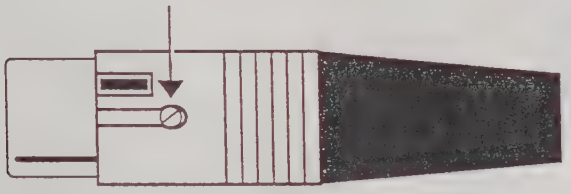
Wiring the 3-Contact Auxiliary Power Plug

1 Loosen the screw that secures the contact housing of the auxiliary power plug from the strain relief housing.



▼ loosen

■ screw securing contact housing

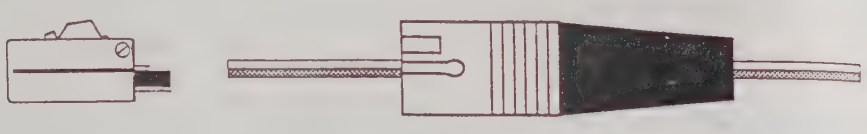
2 Separate the contact housing form the strain relief housing.

■ front view - contact housing ■ contact housing ■ strain relief insert ■ strain relief housing

There is a plastic tubular insert in the strain relief housing that may come out when you separate the pieces. Be careful not to lose this piece. If the insert should come out, put it back into position in the strain relief housing.

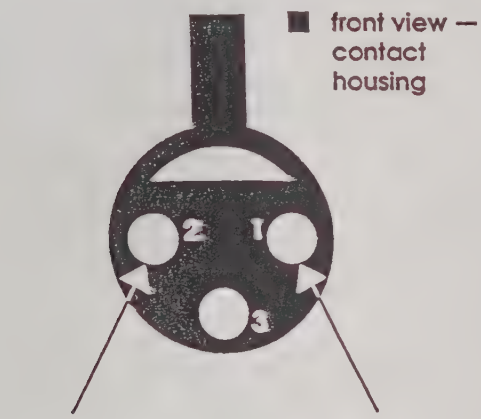
Wiring the 3-Contact Auxiliary Power Plug (continued)

3 Run your cable through the strain relief housing.



■ contact housing ■ your cable ■ strain relief housing

4 Solder your cable wires to the solder cups on the contact housing.



5 Slide the contact housing into the strain relief housing.

6 Tighten the contact housing securing screw.

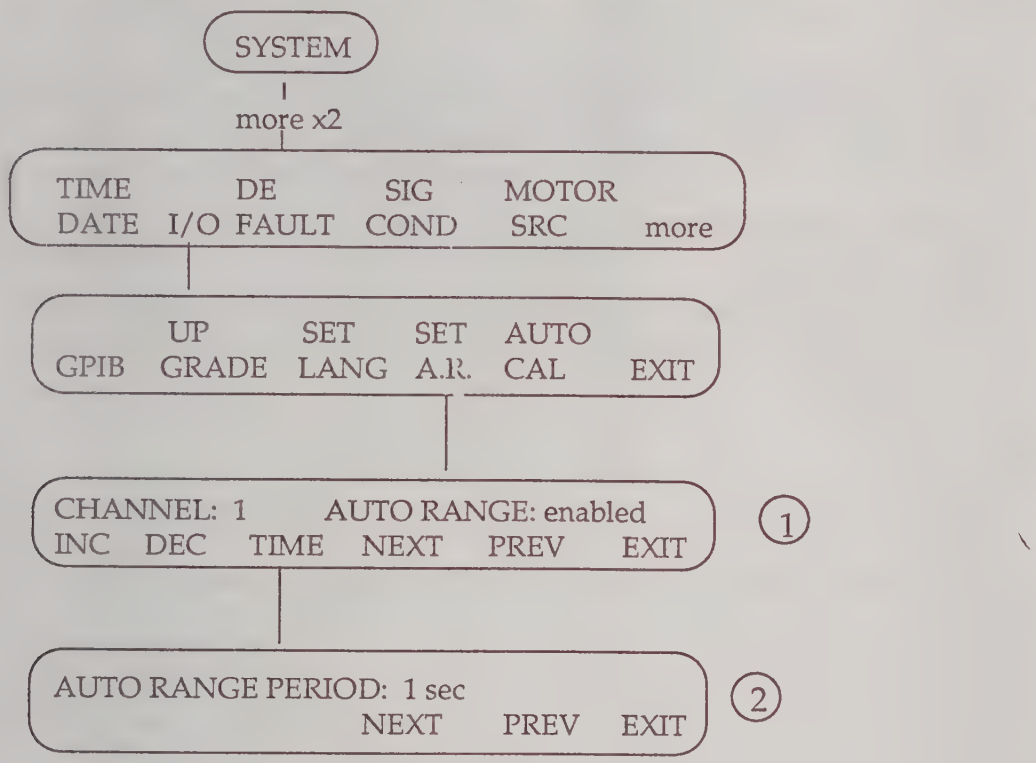
Auto-Ranging — Set-up and Operation

The Auto Range feature is designed to allow a user to have any waveform amplitude become full scale. (The only restriction is that the waveform must have at least a 50 mV excursion; DC waveforms cannot be Auto-Ranged.)

Auto-Range is set-up with a default sample time of 1 second, that is, the Dash 8 will sample your waveform for one second, obtain the minimum and maximum values and make that the full scale excursion on the chart. Please note that to obtain a waveform sample of any time period, three iterations are required, therefore the actual time will be three times that of the set time period. This will become very noticable at long sampling times.

The Dash 8 allows sampling times ranging from 1 to 99 seconds. This range guarantees that almost any waveform can be sampled long enough to obtain a true picture of the maximum range, eliminating the chance of out of range recording.

To Set the Sampling Time for the Auto-Range Feature



1. Individual Channels can be set to Auto-Range. This gives the user the flexibility to choose which of the eight channels will be Auto-Ranged when the front panel AUTO-RANGE key is pressed.

2. The Auto-Range period for the channels enabled in step 1 can be set for any time ranging from 1 to 99 seconds. Remember that it will take three times as long in acutal time to obtain any given sampling time.

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Grid/Waveform Layout – Options and Process

In the Dash 8 the user has a multitude of grid layout options. There are standard layouts for 1, 2, 4, 6, and 8 individual channel modes (same as in MT-9500 plus the six channel mode). The last choice is a 'User Defined' mode - this allows a fully customized chart to be created.The software is designed so that a user selects a waveform size as one of six percentages of full scale as well as the waveform position and the grid, if enabled, will be automatically sized to fit.

The following parameters are user definable for each channel.

Waveform size – The user chooses one of six waveform sizes as a percentage of full scale. The choices are:

Percentage of Full Scale	Max. # of waveforms of this size	Grid Width (if grids enabled)	Number of Divisions (if minor div. enabled)
1	1	175 mm	100 divisions
1/2	2	87 mm	50 divisions
1/4	4	44 mm	50 divisions
1/6	6	28 mm	25 divisions
1/8	8	22 mm	25 divisions
1/14	8	12 mm	10 divisions

Waveform Location - The user picks the center point of the grid and the recorder will automatically place the waveform in that location. Waveforms can be overlapped with this method by selecting the same grid center for each overlapping channel. The selected waveform location is checked against the selected amplitude to make sure the waveform edge is not off the page.

Grid Options - For each channel there are three options: Major divisions on, Major and Minor divisions On or Grid ON/OFF.

This flexibility allows truly custom charts to be easily developed. The menu selection process and some examples of grids will be shown below to illustrate the power of this new feature.

Selection of User Mode

To have the Dash 8 enter the user defined grid mode that has been set-up in the previous section:

1. Press the MODE key
2. Press the MORE key
3. The menu will now be as follows:

8 GRID	4 GRID	2 GRID	1 GRID	USER MODE

4. Pressing the softkey under USER MODE will allow the recorder to print grids and waveforms in the manner the user has previously designed.

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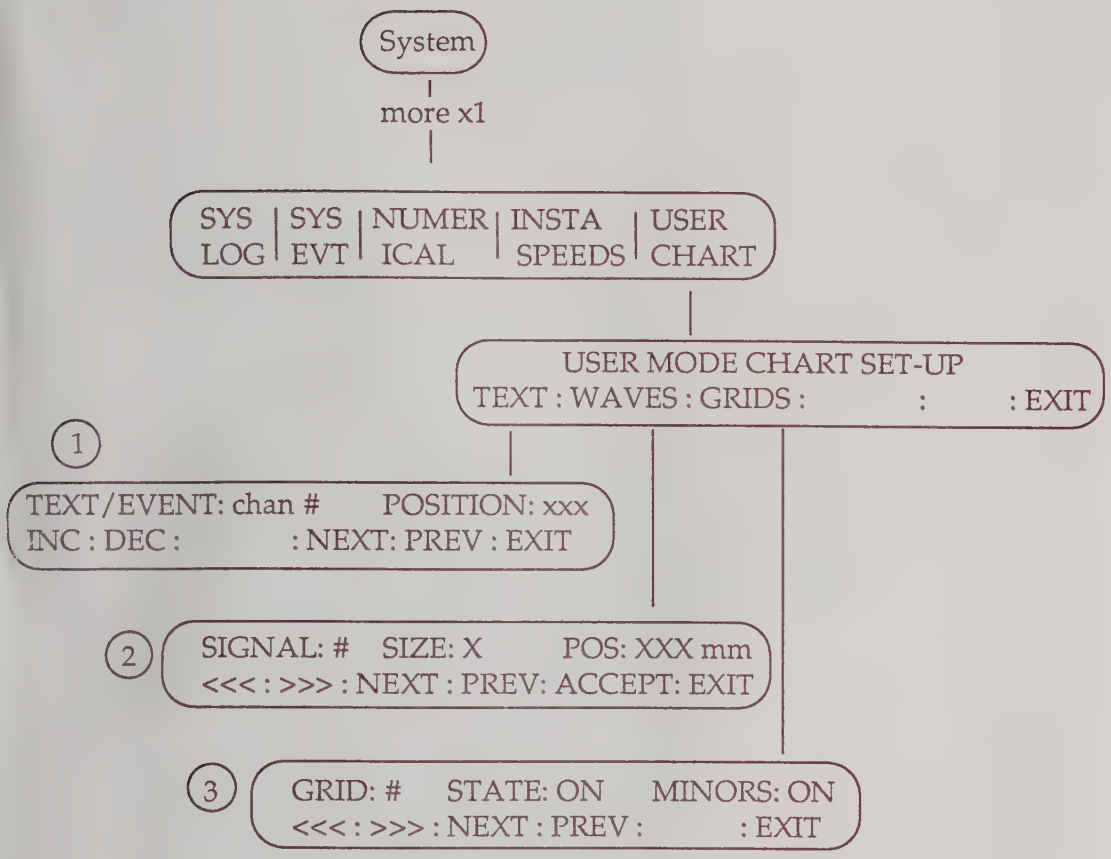
Grid/Waveform Set-Up Menus


System
more x1
SYS LOG | SYS EVT | NUMERICAL | INSTA SPEEDS | USER CHART
USER MODE CHART SET-UP
TEXT : WAVES : GRIDS : : : EXIT
1
TEXT/EVENT: chan # POSITION: xxx
INC : DEC : : NEXT: PREV : EXIT
2
SIGNAL: # SIZE: X POS: XXX mm
<<< : >>> : NEXT : PREV: ACCEPT: EXIT
3
GRID: # STATE: ON MINORS: ON
<<< : >>> : NEXT : PREV : : EXIT

(1) Text and Events can be positioned in one of 200 positions across the chart. Position 1 is on the left hand side of the chart. The text/event channels are moved in real time but because the text buffer must wait until the next print cycle there appears to be a delay. The event channel can be clearly seen to move in real time.

(2) Size is in a percentage of the chart width. (See table on previous page). Note that the waveforms can be moved in mm increments. The position choosen will define the center of the signal size. The Dash 8 will automatically check the bounds of the chosen signal size and placement and ensures that the signal will fit on the chart.

(3) State turns the entire grid (majors and minors) on and off. Minors enables minor grids.

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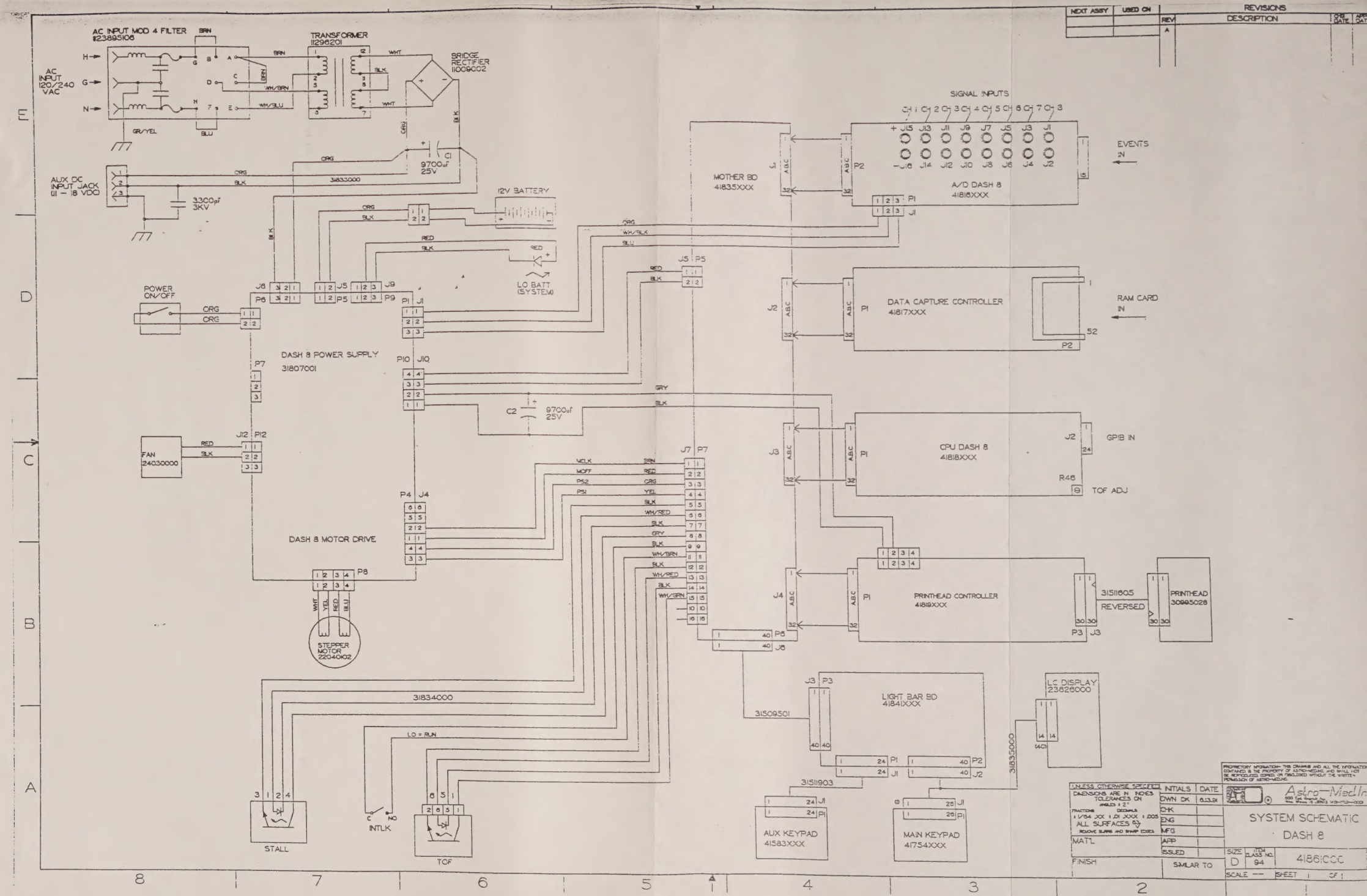
AC INPUT MOD 4 FILTER
#23895106
TRANSFORMER
11296201
BRIDGE RECTIFIER
11009002
AC INPUT 120/240 VAC
AUX DC INPUT JACK (11 – 18 VDC)
9700uf 25V
3300pf 3KV
12V BATTERY
LO BATT (SYSTEM)
POWER ON/OFF
DASH 8 POWER SUPPLY
3180700I
FAN
24030000
DASH 8 MOTOR DRIVE
STEPPER MOTOR
2204002
STALL
INTLK
TOF
LO = RUN
31834000
SIGNAL INPUTS
CH 1 CH 2 CH 3 CH 4 CH 5 CH 6 CH 7 CH 8
EVENTS IN
MOTHER BD
41835XXX
A/D DASH 8
41816XXX
DATA CAPTURE CONTROLLER
41817XXX
RAM CARD IN
CPU DASH 8
41818XXX
GPIB IN
R46
TOF ADJ
PRINTHEAD CONTROLLER
41819XXX
31511605
REVERSED
PRINTHEAD
30995028
LIGHT BAR BD
41841XXX
31509501
LC DISPLAY
23626000
31835000
31511903
AUX KEYPAD
41583XXX
MAIN KEYPAD
41754XXX
NEXT ASSY
USED ON
REVISIONS
REV
DESCRIPTION
DWN DK 6.13.91
SYSTEM SCHEMATIC
DASH 8
SIZE D
DWG NO. 41861CCC
SCALE —
SHEET 1 OF 1